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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,278	12/15/2003	Nobukazu Nagae	15020-000003/US	1774

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EXAMINER

SHERMAN, STEPHEN G

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/734,278	Applicant(s) NAGAE, NOBUKAZU	
	Examiner Stephen G. Sherman	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment filed the 27 February 2007.

Claims 1-17 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6 and 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Morita (US 6,249,744).

Regarding claim 1, Morita discloses an image display system comprising:

at least one display panel (Figures 1, 2 and 7 and column 5, line 67 to column 6, line 4 explain that PDA 200 displays navigation information.);

a memory circuit to store predefined image information, associated with all positions within a predefined space in which the at least one display panel is provided, at least temporarily (Column 5, lines 43-58 and Column 10, lines 64-67 explain that the PDA stores the map information, where the map information is predefined image information which is associated with all of the points within the space the map represents, i.e. a city, a country, the world, etc. which is a predefined space that the PDA is located within.); and

a position sensing subsystem for detecting the position of the at least one display panel within the space (Figure 2 and column 5, lines 22-26 explain that there is a GPS sensor 110 connected to the PDA, where the GPS sensor detects the location of the entire motorcycle and therefore detects the position of the PDA within the space.),

wherein the at least one display panel presents at least a portion of the image information thereon according to its position that has been detected by the position sensing subsystem in the space (Figure 12, column 5, line 59 to column 6, line 4, and column 8, lines 38-41 explain that the PDA receives a status signal as to the operation status of the MPU 111, which defines the location information from GPS sensor 110, and then the PDA 200 displays the location of the motorcycle within the space on a map according to this position information.).

Regarding claim 2, Morita discloses the image display system of claim 1, wherein the position sensing subsystem includes a detecting subsystem for detecting the configuration of the at least one display panel within the space, and wherein the at

least one display panel presents at least a portion of the image information thereon according to its position and configuration that have been detected by the position sensing subsystem (Figures 2 and 12 show the GPS sensor 110 and a map which is shown on the display of the PDA 200. The map shows an arrow that indicates the location of the motorcycle within the space. Column 8, lines 38-41 explain that the map move with respect to the movement of the motorcycle. This means that not only is the position of the PDA sensed but the direction, i.e. orientation, is also sensed. Therefore the map is shown based on the position and orientation of the PDA.).

Regarding claim 3, Morita discloses the image display system of claim 1, further comprising a display data generator for recognizing an image memory area and resolution of the at least one display panel and supplying at least a portion of the image information to the at least one display panel according to the image memory area and resolution recognized (As explained above, the PDA shows a portion of a map, which is stored in the memory of the PDA, that corresponds to the location of the PDA within the area according to its GPS location. The PDA will inherently have a display data generator which will display the portion of the image dependent of the location of the motorcycle, and since the image is able to be display the resolution of the PDA 200 has to be detected or else the device would not functionally work.).

Regarding claim 4, Morita discloses the image display system of claim 3, wherein the display data generator selects at least the portion of the image information

according to the image memory area and resolution recognized, and compresses or expands the selected portion of the image information if necessary (The examiner already explained that the display data generator selects the portion according to the image memory and resolution. Furthermore, since the compression or expansion of the image information is not necessary by the device, this does not need to take place.).

Regarding claim 5, Morita discloses the image display system of claim 1, wherein the at least one display panel presents the portion of the image information in actual dimensions (Figure 12 shows that the map stored in the memory is shown on the display in the actual dimensions of the map.).

Regarding claim 6, Morita discloses the image display system of claim 1, wherein the position sensing subsystem detects the position and/or configuration of the at least one display panel within the space at regular time intervals, and the at least one display panel refreshes the information on its display screen at the regular time intervals (As explained above in the rejection of claim 2, the position sensing subsystem will detect the position and configuration of the device. Furthermore, the GPS sensor would inherently acquire information from the satellites at a regular time interval to detect the position.).

Regarding claim 14, Morita discloses the image display system of claim 1, wherein the portion of the image information, which is associated with the position within

the space, is information that would be unavailable to users without this image display system (The map shown in Figure 12 would not be available to the user without the image display system.).

Regarding claim 15, Morita discloses the image display system of claim 1, wherein the image information is associated with absolute positions within the space (As explained above, GPS is used, which means that the image information is associated with absolute positions within the space.).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 7-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita (US 6,249,744) in view of Hanson et al. (US 6,710,754).

Regarding claim 7, Morita discloses the image display system of claim 1.

Morita fails to teach wherein the position sensing subsystem includes: at least one oscillator, which forms an integral part of the at least one display panel and a position sensing detector, which is provided within the space where the display panel is arranged and which detects at least the position of the display panel within the space in response to a signal that has been transmitted from the at least one oscillator.

Hanson et al. disclose wherein the position sensing subsystem includes:

at least one oscillator, which forms an integral part of the at least one display panel (Column 3, lines 15-24 explain that the location sensor 135 sends a signal to the processing unit 410 and column 3, lines 40-47 explain that communication can take place through a wireless radio frequency link, meaning that the location sensor is an oscillator.); and

a position sensing detector, which is provided within the space where the display panel is arranged and which detects at least the position of the display panel within the space in response to a signal that has been transmitted from the at least one oscillator (Column 3, lines 15-24 explain that the processing unit 410 detects the location signal from the location sensor.).

Therefore it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to use the teaching of locating the oscillator within the

display panel as taught by Hanson et al. with the image display system taught by Morita such that the PDA would contain the sensor detection component of the device in order to allow for the PDA to be utilized as a navigation system without having to function with the motorcycle.

Regarding claim 8, Morita and Hanson et al. disclose the image display system of claim 7,

Hanson et al. also disclose wherein the at least one display panel includes a main display panel (Figure 1, device 120) and a sub-display panel (Figure 1, display 110), the at least one oscillator forming an integral part of the main display panel (As explained in the rejection of claim 7, the oscillator, i.e. location sensor 135 is a part of device 120.), and

wherein the display system further includes a relative position sensing subsystem for detecting the relative positions and relative configurations of the main and sub-display panels (Column 3, lines 15-24 explain that the position sensing subsystem senses the relative location of the main display panel with respect to the sub display panels.), and

wherein the position and configuration of the sub-display panel within the space are detected based on the relative positions of the main and sub-display panels (Column 2, lines 43-65 and column 3, lines 15-24 explain that the configuration of the main panel with respect to the sub panels is detected within the space.).

Regarding claim 10, Morita and Hanson et al. disclose the image display system of claim 8.

Although Morita and Hanson et al. fail to explicitly teach wherein the relative position sensing subsystem detects the relative positions and the relative configurations by using an electromagnetic wave, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to do so in order to allow for the position information to be communicated between the device without interference.

Regarding claim 11, Morita and Hanson et al. disclose the image display system of claim 10.

Although Morita and Hanson et al. fail to explicitly teach wherein the electromagnetic wave is an infrared ray, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to do so in order to allow for the position information to be communicated between the device without interference.

Regarding claim 12, Hanson et al. disclose the image display system of claim 8.

Although Hanson et al. fail to explicitly teach wherein the relative position sensing subsystem detects the relative positions and the relative configurations by using a magnetic field, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to do so in order to allow for the position information to be communicated between the device without interference.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morita (US 6,249,744) in view of Hanson et al. (US 6,710,754) and further in view of Kulas (US 2003/0151562).

Regarding claim 9, Morita and Hanson et al. disclose the image display system of claim 8, wherein multiple display panels, including the at least one display panel, are provided (Figure 1 of Hanson).

Morita and Hanson et al. fail to teach wherein the at least one oscillator is attachable to, and removable from, any of the multiple display panels, and wherein the display panel with the at least one oscillator attached thereto functions as the main display panel.

Kulas discloses wherein the at least one oscillator is attachable to, and removable from, any of the multiple display panels, and wherein the display panel with the at least one oscillator attached thereto functions as the main display panel (Paragraph [0024] explains that there are multiple panels 104, 106 and 108 where 104 is the main screen. Paragraph [0032] then explains that the sensors are placed by a user on the display panels, meaning that the sensors are removable and attachable, and the main panel would have sensors attached to it.).

Therefore it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to use the multiple display method taught by Kulas with the image display system taught by the combination of Morita and Hanson et al. in order to

provide a larger field of view in which the displays of the panels are automatically updated to allow for easily changing the setup.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morita (US 6,249,744) in view of Kulas (US 2003/0151562).

Regarding claim 13, Morita discloses the image display system of claim 1.

Morita fails to teach wherein multiple display panels, including the at least one display panel, are provided, and wherein each of the multiple display panels includes the memory circuit, and extracts an associated portion of the image information according to its position that has been detected within the space by the position sensing subsystem and presents the extracted portion thereon.

Kulas discloses wherein multiple display panels are provided (Figure 2C shows that there are multiple panels 212, 214 and 216.), and wherein each of the multiple display panels includes the memory circuit, and extracts an associated portion of the image information according to its position that has been detected within the space by the position sensing subsystem and presents the extracted portion thereon (Paragraph [0041] explains that each screen receives a portion of an image from a computer 200, which acts as the memory circuit since it stores the image information.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the multiple display method taught by Kulas with the image display system taught by Morita in order to provide a larger field of view in which

the displays of the panels are automatically updated to allow for easily changing he setup.

10. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita (US 6,249,744) in view of Kamakura et al. (US 6,172,657).

Regarding claim 16, Morita discloses the image display system of claim 15.

Morita fails to teach wherein the image information includes pictures of piping and/or wiring provided near the space.

Kamakura et al. disclose of image information including pictures of piping and/or wiring near a space (Figure 10 and column 11, line 43 to column 12, line 11.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the idea of being able to detect and see piping underneath a surface such as the ground as taught by Kamakura et al. with the image display system taught by Morita in order to allow for efficient and accurate measurement and detection of piping located underground that would normally be unseen without the display device.

Regarding claim 17, Morita discloses the image display system of claim 15.

Morita fails to teach wherein the image information includes information representing an intensity distribution of an electromagnetic wave in the space.

Kamakura et al. disclose of image information including information representing an intensity distribution of an electromagnetic wave in the space (Column 11, lines 43-54 explain that ultrasonic waves are used for the detection and column 12, lines 3-11 explain that various sensors are available for detection of objects not visible by a viewer, therefore making it obvious to use electromagnetic waves instead of ultrasonic waves since electromagnetic waves are less likely to have interference and provide for more real time processing and performance.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the idea of being able to detect and see piping underneath a surface such as the ground as taught by Kamakura et al. with the image display system taught by Morita in order to allow for efficient and accurate measurement and detection of piping located underground that would normally be unseen without the display device.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ternullo (US 2004/0041788) discloses a system for performing interactive virtual reality sessions. This applicant is pertinent to claim 1, because image information

regarding a space is stored inside of a memory and at least a portion, if not all of the image is displayed on the screen based on the position and orientation of the device.

Kotzin (US 2004/0125085) discloses a display circuit which virtually expands the image displayed. This applicant is pertinent to claim 1, because image information regarding a space is stored inside of a memory and at least a portion, if not all of the image is displayed on the screen based on the position and orientation of the device.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen G. Sherman whose telephone number is (571) 272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS

28 March 2007

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